

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): An apparatus for exchanging heat, the apparatus comprising:

at least one conduit having a spiral shape for conditioned fluid to flow through[.];

at least one heat sink compartment;

a chip layout comprising at least one thermoelectric unit positioned between the at least one conduit and the at least one heat sink compartment such that ~~one~~ a first surface of the ~~array~~ chip layout is in contact with the fluid conduit and ~~the~~ a second surface is in contact with the heat sink compartment.

Claim 2 (Currently Amended): The apparatus of claim 1 wherein the at least one heat sink compartment is a conduit having an inlet and an outlet for allowing ~~[[a]]~~ the fluid to flow through.

Claim 3 (Original): The apparatus of claim 1 further comprising a motor and a first fan connected to the motor for driving the fluid to be conditioned through the spiral-shaped fluid conduit.

Claim 4 (Currently Amended): The apparatus of claim 3 further comprising a second fan for driving fluid through the heat sink compartment, wherein the motor is a double-shaft motor having two opposite coaxial spinning shafts and the first and second fans are connected each to one of the two opposite shafts.

Claim 5 (Original): The apparatus of claim 4 wherein the motor is located at the heat sink compartment.

Claim 6 (Original): The apparatus of claim 1 wherein the fluid to be conditioned is air.

Claim 7 (Original): The apparatus of claim 1 wherein the fluid driven through the heat sink is air.

Claim 8 (Original): The apparatus of claim 1 wherein the fluid driven through the heat sink is water.

Claim 9 (Currently Amended): The apparatus according to ~~any of the preceding claims~~ claim 1 wherein the spiral shaped fluid conduit comprises a rounded thermally conductive base plate, wherein the plate is in contact with one surface of the thermoelectric layout; and further comprising:

walls perpendicular to the plate, the walls forming a spiral path.

Claim 10 (Currently Amended): The apparatus of claim ~~[[8]]~~ 9 wherein the first fan is positioned at ~~the~~ a center of the spiral path.

Claim 11 (Original): The apparatus of claim 9 wherein the spiral path is provided with a plurality of pin fins perpendicularly protruding from the plate.

Claim 12 (Currently Amended): The apparatus of claim 9 wherein the heat sink comprises a thermally conductive base plate and a plurality of thermally conductive pin fins perpendicular to the plate and wherein [[the]] dimensions of said plate are substantially the same as [[the]] dimensions of the rounded plate of the spiral fluid conduit.

Claim 13 (Currently Amended): The apparatus according to ~~any of the preceding claims~~ claim 1 for use as a fluid conditioner for directing conditioned fluid to a specific location through a conduit connected to the outlet of the spiral shaped conduit.

Claim 14 (Currently Amended): A heat exchange apparatus for use as a compact air-conditioning unit, the apparatus comprising:

a spiral-shaped conditioned-air compartment having a first inlet and a first outlet;
a heat sink compartment having a second inlet and a second outlet;
a thermoelectric array comprising at least one thermoelectric chip, positioned between the conditioned-air compartment and the heat sink compartment, such that when electric current is passed through the array a temperature gradient is formed between the conditioned-air compartment and the heat sink compartment;

a motor having two opposite coaxial spinning shafts; and
~~two~~ first and second fans mounted each on one of the two opposite shafts such that ~~one~~ the first fan is mounted in the conditioned air compartment for driving ambient air through the first inlet, and the second fan is mounted in the heat sink compartment for driving ambient air through the second inlet.

Claim 15 (Original): The apparatus of claim 14 wherein the conditioned air compartment comprises a first heat transfer unit fabricated from a thermal conductive

material, the heat transfer unit comprises a base plate and perpendicular walls forming a spiral path and wherein the first inlet and the first outlet are located at the inner end and the outer end of the spiral path, respectively.

Claim 16 (Original): The apparatus of claim 14 wherein the motor is mounted inside the heat sink compartment such that heat generated during operation of the motor is transferred to the air flowing through the heat sink compartment.

Claim 17 (Currently Amended): A method for conditioning fluid by a heat exchange apparatus, the method comprising:

driving a first fluid to be heated or cooled through a first compartment of a heat exchange apparatus, the compartment ~~comprises~~ comprising a spiral shape path;

driving a second, coolant or heating, fluid through a second compartment of the heat exchange apparatus;

activating a layout comprising at least one thermoelectric chip for forming a temperature gradient between ~~two~~ first and second surfaces of the ~~array~~ layout, wherein ~~one~~ the first surface is in contact with the first compartment and the second surface is in contact with the second compartment.

Claim 18 (Original): The method of claim 17 wherein one motor serves for driving both the first fluid and the second fluid through the first and the second compartments, respectively.

Claim 19 (Currently Amended): The method of claim 18 wherein the motor is provided with two opposite coaxial spinning shafts and wherein a first fan and a second ~~fans~~

fan[[,]] are mounted each on one of the two shafts such that the first fan draws the first fluid through the first compartment and the second fan draws the second fluid through the second compartment.